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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,168

12/29/2005

Yasuyuki Goto

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EXAMINER

FAROKHROOZ, FATIMA N

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/563,168	Applicant(s) GOTO ET AL.	
	Examiner FATIMA N. FAROKHROOZ	Art Unit 2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/29/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

Claims 14-15,18-19, 22-23, and 26-27 that are dependant on claims 10 and 11 are objected to because of the following informalities:

For claims 14-15,18-19, 22-23, and 26-27 the phrase “inorganic compound” is referred to the inorganic compound of claims 10 and 11 on which they are dependant. However in claims 10 and 11 , in the portion “wherein the **inorganic compound (inorganic compound1)** is a combination of a luminescent metal compound with an **inorganic compound (inorganic compound2)** capable (of) dissolving the metal compound therein as a solid solution”, there are two inorganic compounds. It should be made clear which one of the inorganic compounds of claims 10 and 11 the Applicant is referring to in the above listed claims. Appropriate correction is required.

For purposes of art rejection, it is deemed that the “inorganic compound”, in the above listed claims, is referred to the **inorganic compound1** of claims 10 and 11.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2889

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Kido et al (US 20030189401).

Regarding claim 8, Kido teaches a charge injection type electroluminescence device (Fig.9) for undergoing luminescence by recombination of a hole to be injected from an anode and an electron to be injected from a cathode ([0138]), comprising: a luminescent layer formed of an inorganic compound ([0044]; [0046]; also see claim 21 and Abstract of Kido) provided between a hole transport layer ([0135]; [0152]) and an electron transport layer ([0044]; [0152]), each formed of an organic compound ([0044] and [0135]).

Regarding claim 9, Kido teaches an electroluminescence device (Fig.9), wherein the inorganic compound is provided with a metal compound (see metal layer in the light emissive unit in [0044] and metal ion in [0046]; claim 21) which undergoes luminescence by luminescent transition by spin tolerance transition or spin inhibition transition, or undergoes luminescence by luminescent transition by inner-shell transition of a metal ion.

Initially, and with respect to the phrase “which undergoes luminescence by luminescent transition by spin tolerance transition or spin inhibition transition, or undergoes luminescence by luminescent transition by inner-shell transition of a metal

ion” in claim 9, it is respectfully noted that intended use and/or other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, which in the above claim is **“the inorganic compound is provided with a metal compound which undergoes luminescence”** that is disclosed by the prior art then it meets the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kido et al (US 20030189401) in view of Leblans (US 5632930).

Regarding Claims 10 and 11, Kido teaches the invention set forth above (see rejection in Claims 8 and 9 above).

Kido is silent regarding an electroluminescence device, wherein the inorganic compound is a combination of a luminescent metal compound with an inorganic compound capable dissolving the metal compound therein as a solid solution.

In the same field of endeavor, Leblans teaches an inorganic phosphor composition that comprises combination of europium(II) bromide (**inorganic compound**) with cesium iodide (**Cesium Iodide is the luminescent metal compound** ;see lines 37-46 of col.6,lines 16-20 of col.5 and claim 7 of Leblans) in order to stabilize the device in which the phosphor is employed against humidity (see lines 1-5 of col.3).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the inorganic luminescent layer, as disclosed by Leblans, in the electroluminescence device of Kido in order to stabilize the device in which the phosphor is employed against humidity.

Further, Leblan implicitly teaches that the inorganic compound is a combination of a luminescent metal compound with an inorganic compound capable **of dissolving the metal compound therein as a solid solution.** (lines 35-52 of col.6 of Leblan ;wherein the mixture is a powder).

Regarding Claims 12-27, Kido teaches the invention set forth above (see rejection in Claims 8-11 above).

Kido is silent regarding an electroluminescence device, wherein the inorganic compound is a metal halide (claims 12-15)

and wherein the inorganic compound:

ii) is a combination of a halide of a rare earth element with a halide of an alkali metal or an alkaline earth metal (claims 16 -19).

iii) is a combination of a halide of divalent europium with a halide of an alkali metal or an alkaline earth metal (claims 20-23).

iv) is a combination of europium(II) bromide with cesium iodide (CsI) (claims 24-27).

In the same field of endeavor, Leblans teaches a phosphor composition that comprises combination of europium(II) bromide (for claims 24-27; a halide of divalent europium (rare earth element) for claims 12-23) with cesium iodide (for claims 24 -27; halide of an alkali metal for claims 12-23; see lines 37-46 of col.6, lines 16-20 of col.5 and claim 7 of Leblans) in order to stabilize the device in which the phosphor is employed against humidity (see lines 1-5 of col.3).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify the luminescent layer, as disclosed by Leblans, in the electroluminescence device of Kido in order to stabilize the device in which the phosphor is employed against humidity.

Further regarding claims 12-15, wherein the inorganic compound is a metal halide, Leblan teaches that the inorganic compound for the luminescent material can be a metal halide comprising of a halide of a rare earth element with a halide of an alkali metal (see lines 37-46 of col.6, lines 16-20 of col.5 and claim 7 of Leblans which discloses combination of Europium II bromide and Cesium Iodide).

Note: Applicant's specification discloses that "More specifically, examples of the **"metal halide"** include **"combinations of a halide of a rare earth element with a**

halide of an alkali metal or alkaline earth metal". (For example, Applicant's spec. paragraph [0075]). Therefore, claims 12-15 are disclosed by Leblins that teaches that the inorganic compound is Europium II bromide and Cesium Iodide; which have inturn been defined as metal halides in the Applicant's disclosure.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

DE010242006 is in the patent family of 7038221 teaches that a luminophore plate comprises of CSI and Europium Bromide.

US 5540859 teaches an electroluminescent material comprising of CSI and Europium Bromide.

US 4023039 teaches that the luminescent metal compound is Cesium Iodide.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fatima Farokhrooz whose telephone number is (571)-272-6043. The examiner can normally be reached on Monday- Friday, 9 am - 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minh-Toan Ton can be reached on (571) 272-2303. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent

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Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Fatima N Farokhrooz/
Examiner, Art Unit 2889

/Toan Ton/
Supervisory Patent Examiner, Art Unit 2889